

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently amended) A system that produces a reticle, comprising:
a reticle fabrication device; and
a regulation component that receives post-fabrication reticle ~~spectrometry~~ scatterometry inspection data from the fabrication device and mitigates ~~delay-time~~ t-topping defects by utilizing the data to automatically adjust control parameters of the fabrication device, the control parameters comprise at least one of air filtration levels, electron beam exposure levels, electron beam size, bake duration and bake temperature.
2. (Original) The system of claim 1, further comprising a collection component that receives data sent from the fabrication device.
3. (Original) The system of claim 1, the regulation component employing at least one of an advanced process control system, a statistical process control system, a feedback system, a feed forward system, a proportional-integral-derivative control system and a fuzzy logic control system.
4. (Original) The system of claim 1, the fabricating device further fabricating at least one of a semiconductor and a substrate.
5. (Previously presented) The system of claim 2, the collection component employing an algorithm to process received data.

6. (Previously presented) The system of claim 5, the algorithm being a data-mining algorithm comprising at least one of: a neural network, evolutionary programming, memory based reasoning, a decision tree, a genetic algorithm a nonlinear regression and a Bayesian belief network.
7. (Original) The system of claim 1, the fabrication device employed to perform at least one of the steps of expose, post-expose bake, develop and inspection.
8. (Original) The system of claim 1, the reticle comprising at least one of a resist, an opaque metal film and a glass substrate.
9. (Previously presented) The system of claim 8, the resist being at least one of a PMMA, an EBR-9, a PBS, a ZEP 520-12, an AZ5206, an APEX-E, an UV-5, a SAL-601, an UVN2, an UVN30, a NEB-31, a COP and a SAL-606 electron beam resist.
10. (Currently amended) A system that fabricates a reticle, comprising:
- an expose component that writes critical dimensions onto the surface of a resist employed in the fabrication of the reticle;
 - a develop component to process the resist;
 - an inspection component to insure the critical dimensions fabricated on the reticle are not outside of desired tolerances due to time delay defects;
 - a data collection component that receives data from the expose component, ~~a post-expose bake component~~, the develop component and the inspection component;
 - a data processing component that determines what changes are needed to the system to improve reticle fabrication to fall within desired tolerances; and
 - a feedback/feed forward control component to facilitate changes needed as determined by the data processing component, the feedback/feed forward control component is an advanced process control system that automatically ~~makes~~ reduces time-delay defects by changes determined by the data processing component changing one or more of air filtration levels, e-beam exposure levels, exposure time, exposure scheme, e-beam size and temperature.

11. (Previously presented) The system of claim 10, further comprising a post-expose bake component.
12. (Previously presented) The system of claim 10, the inspection component comprises at least one of a scatterometry system, an ellipsometry system, a laser displacement system, an inductive system and a capacitive system.
13. (Canceled)
14. (Previously Presented) The system of claim 10, the advanced process control system further comprising at least one of run-to-run control and fault detection and classification control.
15. (Original) The system of claim 10, the data processing component is a data-mining algorithm.
16. (Withdrawn) A method for monitoring and controlling a reticle fabrication process comprising:
 - exposing the reticle;
 - baking the reticle in a post-expose bake process;
 - developing the reticle;
 - inspecting the reticle;
 - determining if one or more data points are outside of acceptable tolerances;
 - processing the data with an algorithm; and
 - feeding forward or backward the control data to adjust one or more fabrication components or one or more operating parameters associated with the fabrication.
17. (Withdrawn) The method of claim 16 exposing the reticle is performed by at least one of electron beam, X-ray, ion or a light source.
18. (Withdrawn) The method of claim 16, the algorithm is a data-mining algorithm.

19. (Withdrawn) The method of claim 16, inspecting the reticle is accomplished utilizing at least one of scatterometry, ellipsometry, laser displacement, inductive or capacitive technologies

20. (Withdrawn) A method for monitoring and controlling a reticle fabrication process, the method comprising:

means for exposing the reticle;

means for baking the reticle after exposure is complete;

means for developing the reticle;

means for inspecting the reticle;

means for collecting the data provided during the fabrication and inspection of the reticle;

and

means for providing feedback and/or feed forward control to the fabrication process.